

#6

Attorney Docket No.: DIVER1440-2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Madden, *et al.* Art Unit: 1632
Application No.: 09/751,299 Examiner Unassigned
Filed: December 28, 2000
Title: METHODS FOR PRODUCING ENANTIOMERICALLY PURE α -
SUBSTITUTED CARBOXYLIC ACIDS

Commissioner for Patents
Washington, D.C. 20231

VERIFIED STATEMENT UNDER 37 C.F.R. § 1.821(f)

Sir:

I, Mikhail Bayley, declare that I personally prepared the paper and the computer-readable copies of the Sequence Listing filed herewith in the above-entitled case and that the content of both is the same.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of The United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: 05/08/2001

Mikhail Bayley
Mikhail Bayley

GRAY CARY WARE & FREIDENRICH LLP
4365 Executive Drive, Suite 1600
San Diego, CA 92121-2189
Customer Number: 28213

CERTIFICATION UNDER 37 CFR §1.8

I hereby certify that the documents referred to as enclosed herein are being deposited with the United States Postal Service as first class mail on this date, 5-8-01, in an envelope addressed to:
Commissioner for Patents, Washington, D.C. 20231.

Name of Person Mailing Paper

Signature

5-8-01

Date



#6

PATENT

Attorney Docket No.: DIVER1440-2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Mark Madden et al. Art Unit: 1632
Application No.: 09/751,299 Examiner: Unassigned
Filed: December 28, 2000
Title: METHODS FOR PRODUCING ENANTIOMERICALLY PURE ALPHA-SUBSTITUTED CARBOXYLIC ACIDS

BOX SEQUENCE

Commissioner for Patents
Washington, D.C. 20231

**STATEMENT UNDER 37 C.F.R. §§ 1.821(f) and (g);
and 37 C.F.R. § 1.825 (b)**

Sir:

I hereby state, as required by 37 C.F.R. § 1.821(f), that the information recorded in computer readable form is identical to the written sequence listing.

I hereby state that the submission, filed in accordance with 37 C.F.R. § 1.821 (g), herein does not include new matter.

I hereby state that the substitute copy of the computer readable form, submitted in accordance with 37 C.F.R. § 1.825 (b), is the same as the amended Sequence Listing.

Respectfully submitted,

Date:

5/8/01

Lisa A. Haile, Ph.D.

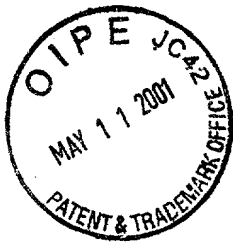
Reg. No. 38,347

Telephone: (858) 677-1456

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GRAY CARY WARE & FREIDENRICH LLP
4365 Executive Drive, Suite 1600
San Diego, CA 92121-2189
USPTO Customer Number 28213

CERTIFICATION UNDER 37 CFR §1.8	
I hereby certify that the documents referred to as enclosed herein are being deposited with the United States Postal Service as first class mail on this date, <u>5-8-01</u> , in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231.	
<u>Yima Najar</u>	
Name of Person Mailing Paper	
Signature <u>[Signature]</u>	Date <u>5-8-01</u>



PATENT
Attorney Docket No.: DIVER1440-2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Mark Madden et al. Art Unit: 1632
Application No.: 09/751,299 Examiner: Unassigned
Filed: December 28, 2000
Title: METHODS FOR PRODUCING ENANTIOMERICALLY PURE ALPHA-SUBSTITUTED CARBOXYLIC ACIDS

BOX SEQUENCE
Commissioner for Patents
Washington, D.C. 20231

**AMENDMENT AND RESPONSE TO NOTICE TO COMPLY WITH
SEQUENCE LISTING REQUIREMENTS UNDER 37 C.F.R. §§ 1.821-1.825**

Dear Sir:

In response to the Notice to File Missing Parts for patent applications containing nucleotide sequence and/or amino acid sequence, Applicants provide herewith a computer readable and a paper copy of the Sequence Listing in accordance with 37 C.F.R. § 1.821 *et seq.*

Please amend the application as follows:

In the Specification:

Following the abstract, please insert the attached Sequence Listing with subsequent page numbering thereafter.

CERTIFICATION UNDER 37 CFR §1.8	
I hereby certify that the documents referred to as enclosed herein are being deposited with the United States Postal Service as first class mail on this date, <u>5-8-01</u> , in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231.	
<u>Simra Najar</u>	
Name of Person Mailing Paper	
<u>[Signature]</u>	<u>5-8-01</u> Date
Signature	

7

In re Application of: Madden et al.
Application No.: 09/751,299
Filed: December 28, 2000
Page 2

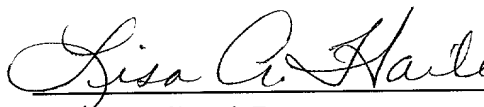
PATENT
Attorney Docket No.: DIVER1440-2

If the Examiner would like to discuss any of the issues raised in this Amendment or the attached sequence listing, Applicants' representative can be reached at (858) 677-1456.

Respectfully submitted,

Date: _____

5/8/01



Lisa A. Haile, Ph.D.

Reg. No. 38,347

Telephone: (858) 677-1456

Facsimile: (858) 677-1465

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4365 Executive Drive, Suite 1600
San Diego, CA 92121-2189
USPTO Customer Number 28213

09/751,299-051101
FILED



#8

SEQUENCE LISTING

<110> Madden, Mark
Weiner, David P.
Chaplin, Jennifer A.

<120> METHODS FOR PRODUCING ENANTIOMERICALLY PURE
ALPHA-SUBSTITUTED CARBOXYLIC ACIDS

<130> DIVER1440-2

<140> US 09/751,299

<141> 2000-12-28

<150> 60/254,414

<151> 2000-12-07

<150> 60/173,609

<151> 1999-12-29

<160> 4

<170> PatentIn Ver. 2.1

 $\langle 210 \rangle$ 1

<211> 1041

<212> DNA

<213> Unknown Organism

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<223> Description of Unknown Organism: Obtained from an environmental sample

$\langle 220 \rangle$

<221> CDS

<222> (1) . . (1041)

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1 5 10 15

ccg gtg ttc ctc gat ctc gac cgc aca gtc gag aaa gcg atc ggc ctg 96
Pro Val Phe Leu Asp Leu Asp Arg Thr Val Glu Lys Ala Ile Gly Leu
20 25 30

atc gag cag gcg gcc aag cag gac gtg cgc ctg atc gca ttc cca gag 144
Ile Glu Gln Ala Ala Lys Gln Asp Val Arg Leu Ile Ala Phe Pro Glu
35 40 45

act tgg att ccc ggc tat ccc ttt tgg ata tgg ctg ggc gcg ccg gct 192
Thr Trp Ile Pro Gly Tyr Pro Phe Trp Ile Trp Leu Gly Ala Pro Ala
50 55 60

tgg	ggc	atg	cgc	ttc	gtc	cag	cgc	tat	ttc	gag	aat	tcg	ctc	gtg	cgc	240
Trp	Gly	Met	Arg	Phe	Val	Gln	Arg	Tyr	Phe	Glu	Asn	Ser	Leu	Val	Arg	
65					70					75					80	

ggc agc aag cag tgg cag gcc ctg gcg gat gcg gcc cgc cgc cac ggc 288
Gly Ser Lys Gln Trp Gln Ala Leu Ala Asp Ala Ala Arg Arg His Gly
85 90 95

atg Met	cat His	gtc Val	gtg Val	gcc Ala	ggc Gly	tat Tyr	agc Ser	gag Glu	cgc Arg	gcg Ala	ggc Gly	ggc Gly	agc Ser	ctc Leu	tat Tyr	336
		100						105						110		
atg Met	ggc Gly	cag Gln	gcg Ala	atc Ile	ttc Phe	ggc Gly	ccc Pro	gat Asp	ggc Gly	gat Asp	ctg Leu	atc Ile	gcc Ala	gcg Ala	cgc Arg	384
		115						120						125		
cgc Arg	aag Lys	ctc Leu	aag Lys	cct Pro	acc Thr	cat His	gcg Ala	gag Glu	cgc Arg	acc Thr	gtg Val	ttc Phe	ggc Gly	gag Glu	gga Gly	432
		130						135						140		
gac Asp	ggc Gly	agc Ser	cat His	ctc Leu	gcg Ala	gtg Val	cac His	gat Asp	acc Thr	gcc Ala	atc Ile	ggg Gly	cgc Arg	ctc Leu	ggc Gly	480
						150						155				160
gcg Ala	ctc Leu	tgt Cys	tgc Cys	tgg Trp	gag Glu	cac His	atc Ile	cag Gln	cca Pro	ttg Leu	tcg Ser	aaa Lys	tac Tyr	gcc Ala	atg Met	528
				165						170						175
tac Tyr	gcc Ala	gcc Ala	gac Asp	gaa Glu	cag Gln	gtc Val	cac His	gtc Val	gcg Ala	tcg Ser	tgg Trp	ccg Pro	agc Ser	ttc Phe	agc Ser	576
				180						185						190
ctc Leu	tat Tyr	cgc Arg	ggc Gly	atg Met	gcc Ala	tat Tyr	gcg Ala	ctc Leu	gga Gly	ccg Pro	gag Glu	gtc Val	aat Asn	acc Thr	gcc Ala	624
		195						200						205		
gca Ala	agc Ser	cag Gln	atc Ile	tac Tyr	gcg Ala	gtc Val	gag Glu	ggc Gly	ggc Gly	tgc Cys	tac Tyr	gtg Val	ctg Leu	gcg Ala	tcg Ser	672
		210						215				220				
tgc Cys	gcg Ala	acc Thr	gtt Val	tcg Ser	ccg Pro	gag Glu	atg Met	atc Ile	aag Lys	gta Val	ttg Leu	gtg Val	gat Asp	acg Thr	ccc Pro	720
		225				230						235				240
gac Asp	aag Lys	gag Glu	atg Met	ttc Phe	ctc Leu	aag Lys	gcc Ala	ggc Gly	ggc Gly	ggt Gly	ttt Phe	gcc Ala	atg Met	att Ile	ttc Phe	768
				245						250						255
ggg Gly	ccc Pro	gac Asp	ggc Gly	cgc Arg	gcc Ala	ctg Leu	gcc Ala	gag Glu	ccg Pro	ctc Leu	ccg Pro	gag Glu	acc Thr	gaa Glu	gag Glu	816
		260						265						270		
gga Gly	ctg Leu	ctg Leu	gtc Val	gcc Ala	gat Asp	atc Ile	gac Asp	ctc Leu	ggc Gly	atg Met	atc Ile	gcg Ala	ttg Leu	gcc Ala	aag Lys	864
		275						280						285		
gcg Ala	gcg Ala	gcc Ala	gat Asp	ccg Pro	gcg Ala	ggc Gly	cac His	tat Tyr	tca Ser	cgg Arg	ccc Pro	gac Asp	gta Val	acg Thr	cgg Arg	912
		290						295				300				
ctg Leu	ctg Leu	ctg Leu	gat Asp	cga Arg	cgt Arg	ccg Pro	gcc Ala	caa Gln	cgc Arg	gtc Val	gtc Val	acg Thr	ctt Leu	gat Asp	gcc Ala	960
		305				310				315						320
gca Ala	ttc Phe	gaa Glu	ccg Pro	caa Gln	aac Asn	gag Glu	gac Asp	aag Lys	ggc Gly	gac Asp	gcg Ala	ccc Pro	gcg Ala	ctg Leu	cgc Arg	1008
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1041

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 <223> Description of Unknown Organism: Obtained from an
 environmental sample

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 Pro Val Phe Leu Asp Leu Asp Arg Thr Val Glu Lys Ala Ile Gly Leu
 20 25 30
 Ile Glu Gln Ala Ala Lys Gln Asp Val Arg Leu Ile Ala Phe Pro Glu
 35 40 45
 Thr Trp Ile Pro Gly Tyr Pro Phe Trp Ile Trp Leu Gly Ala Pro Ala
 50 55 60
 Trp Gly Met Arg Phe Val Gln Arg Tyr Phe Glu Asn Ser Leu Val Arg
 65 70 75 80
 Gly Ser Lys Gln Trp Gln Ala Leu Ala Asp Ala Ala Arg Arg His Gly
 85 90 95
 Met His Val Val Ala Gly Tyr Ser Glu Arg Ala Gly Gly Ser Leu Tyr
 100 105 110
 Met Gly Gln Ala Ile Phe Gly Pro Asp Gly Asp Leu Ile Ala Ala Arg
 115 120 125
 Arg Lys Leu Lys Pro Thr His Ala Glu Arg Thr Val Phe Gly Glu Gly
 130 135 140
 Asp Gly Ser His Leu Ala Val His Asp Thr Ala Ile Gly Arg Leu Gly
 145 150 155 160
 Ala Leu Cys Cys Trp Glu His Ile Gln Pro Leu Ser Lys Tyr Ala Met
 165 170 175
 Tyr Ala Ala Asp Glu Gln Val His Val Ala Ser Trp Pro Ser Phe Ser
 180 185 190
 Leu Tyr Arg Gly Met Ala Tyr Ala Leu Gly Pro Glu Val Asn Thr Ala
 195 200 205
 Ala Ser Gln Ile Tyr Ala Val Glu Gly Gly Cys Tyr Val Leu Ala Ser
 210 215 220
 Cys Ala Thr Val Ser Pro Glu Met Ile Lys Val Leu Val Asp Thr Pro
 225 230 235 240
 Asp Lys Glu Met Phe Leu Lys Ala Gly Gly Gly Phe Ala Met Ile Phe
 245 250 255
 Gly Pro Asp Gly Arg Ala Leu Ala Glu Pro Leu Pro Glu Thr Glu Glu
 260 265 270
 Gly Leu Leu Val Ala Asp Ile Asp Leu Gly Met Ile Ala Leu Ala Lys
 275 280 285
 Ala Ala Ala Asp Pro Ala Gly His Tyr Ser Arg Pro Asp Val Thr Arg
 290 295 300
 Leu Leu Leu Asp Arg Arg Pro Ala Gln Arg Val Val Thr Leu Asp Ala
 305 310 315 320
 Ala Phe Glu Pro Gln Asn Glu Asp Lys Gly Asp Ala Pro Ala Leu Arg
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TOTAL 6625460

<211> 1014

<212> DNA

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: Obtained from an
environmental sample

<220>

<221> CDS

<222> (1)..(1014)

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1 5 10 15	
atg gat ttg gag gcg acg gtg gac aaa acc att gag ttg atg gaa gaa	96
Met Asp Leu Glu Ala Thr Val Asp Lys Thr Ile Glu Leu Met Glu Glu	
20 25 30	
gca gca cgt aat aat gct cgt ctg atc gcc ttt ccg gaa act tgg att	144
Ala Ala Arg Asn Asn Ala Arg Leu Ile Ala Phe Pro Glu Thr Trp Ile	
35 40 45	
cca ggc tac cca tgg ttt ctt tgg ctt gac tca cca gca tgg gca atg	192
Pro Gly Tyr Pro Trp Phe Leu Trp Leu Asp Ser Pro Ala Trp Ala Met	
50 55 60	
caa ttt gta cgc caa tac cat gag aac tca ttg gag ttg gat ggc cct	240
Gln Phe Val Arg Gln Tyr His Glu Asn Ser Leu Glu Leu Asp Gly Pro	
65 70 75 80	
caa gct aag cgc att tca gat gca gcc aag cgg ttg gga atc atg gtc	288
Gln Ala Lys Arg Ile Ser Asp Ala Ala Lys Arg Leu Gly Ile Met Val	
85 90 95	
acc ctg ggg atg agt gaa cgg gtc ggt ggc acc ctt tac atc agt cag	336
Thr Leu Gly Met Ser Glu Arg Val Gly Gly Thr Leu Tyr Ile Ser Gln	
100 105 110	
tgg ttc ata ggc gat aat ggt gac acc att ggg gcc cgg cga aag ttg	384
Trp Phe Ile Gly Asp Asn Gly Asp Thr Ile Gly Ala Arg Arg Lys Leu	
115 120 125	
aaa cct act ttt gtt gaa cgt act ttg ttc ggc gaa ggg gat ggt tca	432
Lys Pro Thr Phe Val Glu Arg Thr Leu Phe Gly Glu Gly Asp Gly Ser	
130 135 140	
tcg cta gcg gtt ttc gag acg tct gtt gga agg ctg ggt ggc tta tgc	480
Ser Leu Ala Val Phe Glu Thr Ser Val Gly Arg Leu Gly Gly Leu Cys	
145 150 155 160	
tgt tgg gag cac ctt caa ccg cta aca aaa tac gct ttg tat gca caa	528
Cys Trp Glu His Leu Gln Pro Leu Thr Lys Tyr Ala Leu Tyr Ala Gln	
165 170 175	
aat gaa gag att cat tgt gcg gct tgg ccg agc ttt agc ctt tat cct	576
Asn Glu Glu Ile His Cys Ala Ala Trp Pro Ser Phe Ser Leu Tyr Pro	
180 185 190	

F01150-0527260

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 Asn Ala Ala Lys Ala Leu Gly Pro Asp Val Asn Val Ala Ala Ser Arg
 195 200 205
 atc tat gcc gtt gaa ggg caa tgc ttc gta cta gcg tcg tgt gcg ctc 672
 Ile Tyr Ala Val Glu Gly Gln Cys Phe Val Leu Ala Ser Cys Ala Leu
 210 215 220
 gtt tca caa tcc atg atc gat atg ctt tgt aca gat gac gaa aag cat 720
 Val Ser Gln Ser Met Ile Asp Met Leu Cys Thr Asp Asp Glu Lys His
 225 230 235 240
 gcg ttg ctt ctg gct ggt ggt gga cac tca cgt atc ata ggg cct gat 768
 Ala Leu Leu Leu Ala Gly Gly Gly His Ser Arg Ile Ile Gly Pro Asp
 245 250 255
 ggt ggt gac ttg gtc gcg cct ctt gcc gaa aat gaa gag ggt att ctc 816
 Gly Gly Asp Leu Val Ala Pro Leu Ala Glu Asn Glu Glu Gly Ile Leu
 260 265 270
 tac gca aac ctt gat cct gga gta cgc atc ctt gct aaa atg gcg gca 864
 Tyr Ala Asn Leu Asp Pro Gly Val Arg Ile Leu Ala Lys Met Ala Ala
 275 280 285
 gac cct gct ggt cat tat tcc cgt ccc gac att act cgc ttg cta ata 912
 Asp Pro Ala Gly His Tyr Ser Arg Pro Asp Ile Thr Arg Leu Leu Ile
 290 295 300
 gat cgc agc cct aaa tta ccg gta gtt gaa att gaa ggt gat ctt cgt 960
 Asp Arg Ser Pro Lys Leu Pro Val Val Glu Ile Glu Gly Asp Leu Arg
 305 310 315 320
 cct tac gct ttg ggt aaa gcg tct gag acg ggt gcg caa ctc gaa gaa 1008
 Pro Tyr Ala Leu Gly Lys Ala Ser Glu Thr Gly Ala Gln Leu Glu Glu
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 att tga 1014
 Ile

<210> 4

<211> 337

<212> PRT

<213> Unknown Organism

<223> Description of Unknown Organism: Obtained from an environmental sample

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 1 5 10 15
 Met Asp Leu Glu Ala Thr Val Asp Lys Thr Ile Glu Leu Met Glu Glu
 20 25 30
 Ala Ala Arg Asn Asn Ala Arg Leu Ile Ala Phe Pro Glu Thr Trp Ile
 35 40 45
 Pro Gly Tyr Pro Trp Phe Leu Trp Leu Asp Ser Pro Ala Trp Ala Met
 50 55 60
 Gln Phe Val Arg Gln Tyr His Glu Asn Ser Leu Glu Leu Asp Gly Pro
 65 70 75 80
 Gln Ala Lys Arg Ile Ser Asp Ala Ala Lys Arg Leu Gly Ile Met Val
 85 90 95
 Thr Leu Gly Met Ser Glu Arg Val Gly Gly Thr Leu Tyr Ile Ser Gln

09751299-05401

Ile